Harnessing Light with Photonic Nanowires: Fundamentals and Applications to Quantum Optics (ChemPhysChem 11/2013)

Cover Picture

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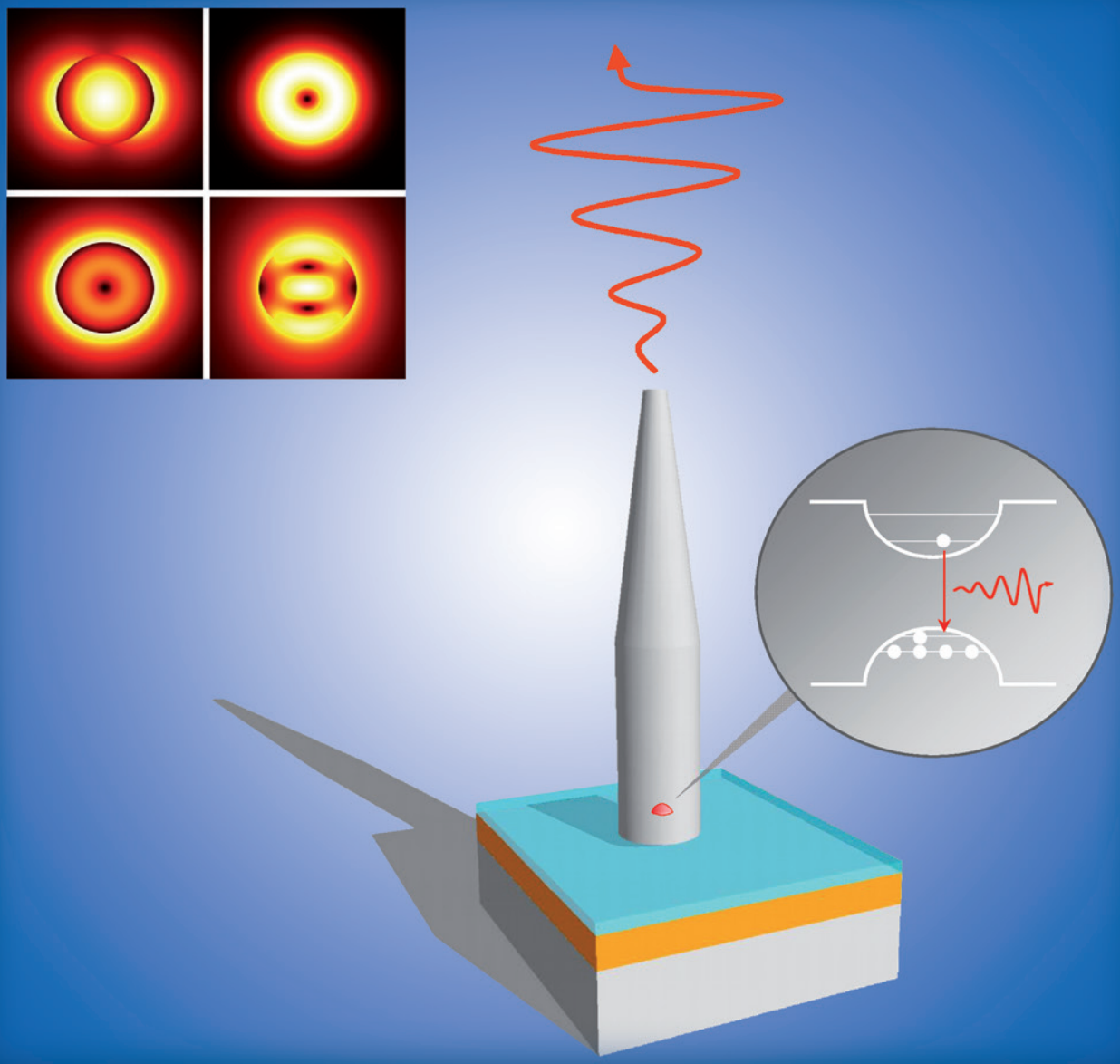

11/2013

Reviews: A Quantitative Measure of Materials' Interfacial Commensurability (O. Hod)
Minireviews: Harnessing Light with Photonic Nanowires (J. Claudon et al.)
Original Contributions: Mechanically Driven Flow of Solutions in a Zeolite-Type Nanochannel System (L. Liu and X. Chen)

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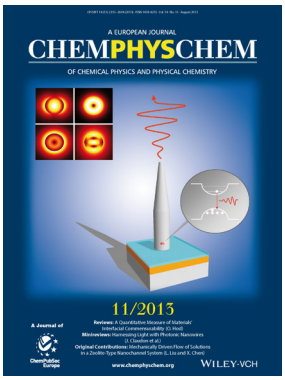
Cover Picture

Julien Claudon*, Niels Gregersen, Philippe Lalanne, and Jean-Michel Gérard



Artist view of an optical antenna based on a tailored photonic wire, as it is discussed by J. Claudon et al. on p. 2393. The antenna exploits both the broadband spontaneous emission control offered by a single-mode photonic wire and the engineering of its far-field emission, using a planar mirror and a top conical taper. By inserting a quantum dot inside the wire, one realizes a very bright single-photon source. Beyond this first application, such a structure opens appealing perspectives for the future developments of solid-state quantum optics.